



Coffee Break Training - Fire Protection Series

Portable Fire Extinguishers: Extinguishing Agent Selection for Use Around Aircraft

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Learning Objective: The student will be able to describe which extinguishing agents are appropriate for use in close proximity to aircraft (on vehicles or structures).

Hand-held portable fire extinguishers at airport ramps have come into significant focus recently with increasing concerns about the extinguishing agents' effects on aircraft.

While commonly used and the most economical option in terms of initial cost, Type A-B:C monoammonium phosphate-based dry chemical extinguishers can cause significant damage to aircraft. According to the 2009 International Fire Code Commentary in Section 11, Aviation Facilities, "This agent [A-B:C dry chemical] will melt and flow when it comes into contact with heated surfaces and, once it comes into contact with hot aluminum and works its way into the structural joints and crevices, it cannot be flushed out as the B:C-dry chemical agents [sodium or potassium bicarbonate] can."



The arrows in this picture highlight locations where portable fire extinguishers should be provided at aircraft ramps.

The National Fire Protection Association (NFPA) issued a Temporary Interim Amendment to the 2012 edition of NFPA 407, *Standard for Aircraft Fuel Servicing* on this matter. Temporary Interim Amendments are issued only when important changes are required that cannot be delayed until the standard's next revision cycle. For the NFPA 407 technical committee, the urgency was to stop the increasing use of Type A-B:C dry chemical on aircraft fueling vehicles, airport fuel servicing ramps, airport aprons, and airport fuel facilities.

A 2005 service letter¹ from a major aircraft manufacturer recommends the use of suitably rated water, carbon dioxide, aqueous film-forming foam, or clean agent fire extinguishers for use around aircraft because they do not damage aircraft and require either no cleaning or just a rinse with water. Type A-B:C dry chemical agents should be avoided.

While Purple K (potassium bicarbonate) is not endorsed by airframe manufacturers due to the level of cleaning and downtime required, its use around aircraft is common due to its effectiveness on aviation fuel fires. Purple K is the current recommendation by equipment manufacturers for fueling carts and other airport vehicles requiring 20B:C minimum rated hand-held extinguishers.

For more information, consider enrolling in the National Fire Academy course "Fire Inspection Principles" (R/N0220). Information and applications can be obtained at <http://apps.usfa.fema.gov/nfacourses/catalog/details/47>.

¹Boeing Commercial Aviation Services, Service Letter, ATA 0300-00, 2620-00, Avoid Use of Dry Chemical Fire Extinguishers On Airplanes, August 16, 2005.

